

WHAT IS CLAIMED IS:

1. A recording and/or playback apparatus comprising:

a base;

a disk rotation driving mechanism which supports an optical disk and rotates the optical disk;

an optical pickup which focuses a light beam emitted from a light source by an objective lens onto a recording surface of the optical disk and detects a return light from the optical disk;

a guide means having a first guide shaft which supports the one end of the optical pickup and a second guide shaft which supports the other end of the optical pickup, the first and second guide shafts being disposed on the base in parallel to each other radially of the optical disk;

an optical pickup driving means guided by the first and second guide shafts to move the optical pickup radially of the optical disk; and

a skew adjusting means including an elastic member which provides a force to the first and second guide shafts in a direction generally perpendicular to the main side of the optical disk and an adjusting screw which is in contact with the first and second guide shafts from the opposite side of the elastic member, and which adjust a skew by adjusting the inclination of the first and second guide shafts by the adjusting screw.

2. The apparatus as set forth in claim 1, wherein the elastic member is a conical helical spring.

3. The apparatus as set forth in claim 1, wherein the elastic member is a hollow cylinder of silicon rubber.
4. The apparatus as set forth in claim 1, wherein the elastic member is electrically conductive.
5. The apparatus as set forth in claim 1, wherein the skew adjusting member is provided at each of the opposite ends of the first and second guide shafts.
6. The apparatus as set forth in claim 1, wherein the elastic member is fixed in a skew-adjusted state with an adhesive.
7. A recording and/or playback apparatus comprising:
 - a base;
 - a disk rotation driving mechanism which supports an optical disk and rotates the optical disk;
 - an optical pickup which focuses a light beam emitted from a light source by an objective lens onto a recording surface of the optical disk and detects a return light from the optical disk;
 - a guide means having a first guide shaft which supports the one end of the optical pickup and a second guide shaft which supports the other end of the optical pickup, the first and second guide shafts being disposed on the base in parallel to each other radially of the optical disk;
 - an optical pickup driving means guided by the first and second guide shafts to move the optical pickup radially of the optical disk; and

a skew adjusting means including an elastic member which provides a force to the first and second guide shafts in a direction generally perpendicular to the main side of the optical disk and an adjusting screw which is in contact with the first and second guide shafts from the opposite side of the elastic member, and which adjust a skew by adjusting the inclination of the first and second guide shafts by the adjusting screw,

the adjusting screw being electroconductive or being plated to be electroconductive and having a ground potential.

8. A step motor including a lead screw engaged in a pickup chassis and having engaged thereon a feeding member which feeds the pickup chassis radially of a disk-shaped recording medium, a magnet rotated along with the lead screw, a magnetic coil which acts on the magnet to rotates the lead screw, and a housing which houses the magnet and magnetic coil, wherein:

the housing has an opening formed in each of the upper and lower sides thereof and between a concavity in a disk tray having the pickup chassis installed therein and a bottom plate which supports the bottom of the disk tray.

9. A recording and/or playback apparatus including a pickup moving mechanism using a step motor which includes a lead screw engaged in a pickup chassis and having engaged thereon a feeding member which feeds the pickup chassis radially of a disk-shaped recording medium, a magnet rotated along with the lead screw, a magnetic coil which acts on the magnet to rotates the lead screw, and a housing which houses the magnet and magnetic coil, wherein:

the housing has an opening formed in each of the upper and lower sides thereof and between a concavity in a disk tray having the pickup chassis installed therein and a bottom plate which supports the bottom of the disk tray.

10. A recording and/playback apparatus comprising:

an optical pickup unit having an objective lens disposed therein;

a pickup moving mechanism to move the optical pickup unit; and

an engagement member which engages an pickup base of the optical pickup unit and the pickup moving mechanism with each other,

the engagement member including:

an engagement projection engaged in threads formed on a lead screw; and

a compartment provided contiguously to the pickup base to house a clearance definition member which retains the engagement projection at a distance which assures the engagement on the lead screw,

the clearance definition member being housed in isolation from the wall of the compartment by a clearance smaller than the depth of engagement of the engagement projection with the threads on the lead screw.

11. The apparatus as set forth in claim 10, wherein the pickup moving mechanism includes a step motor which drives to rotate the lead screw.

12. A recording and/or playback apparatus comprising:

an optical pickup unit including a pickup base;

a pickup moving mechanism including a lead screw which moves the pickup

base; and

an engagement member including:

a side wall fixed to the pickup base and having formed outside thereof an engagement projection engaged on the lead screw;

a compartment having housed therein a clearance definition member which supports the inner surface of the side wall to maintain a distance that assures the engagement between the engagement projection and lead screw; and

a hinge provided on the base end of the side wall and flexible in a direction in which the side wall is moved toward or away from the lead screw,

the clearance definition member including a support piece extending along the inner surface of the side wall toward outside the compartment.

13. The apparatus as set forth in claim 12, wherein the support piece is bent outside the side wall.

14. The apparatus as set forth in claim 12, wherein the clearance definition member being housed in isolation from the wall of the compartment by a clearance smaller than the depth of engagement of the engagement projection in the threads on the lead screw.

15. The apparatus as set forth in claim 12, wherein the compartment has an opening formed in the bottom thereof.

16. A recording and/or playback apparatus comprising:

a pickup chassis having provided thereon an optical pickup, pickup moving

mechanism and a disk rotation driving mechanism;

a cover member having formed therein an opening through which the pickup and disk table face the recording surface of a disk-shaped recording medium and which is connected to the pickup chassis to form a part of a concavity in which the disk-shaped recording medium is to be received; and

a disk tray having formed therein the disk-shaped recording medium receiving concavity, generally circular, and having formed therein an opening through which the cover member faces directly the recording surface of the disk-shaped recording medium and which is closed by the cover member when the latter is connected to the pickup chassis,

the pickup chassis, cover member and disk tray being formed from materials different in coefficient of thermal expansion from each other;

the disk tray having a projection provided on a wall provided at the outer-circumferential side of the concavity and extending to above the opening to maintain a clearance between the outer-circumferential wall and the cover member which closes the opening.

17. The apparatus as set forth in claim 16, wherein:

the pickup chassis is formed from iron;

the cover member is formed from aluminum or stainless steel; and

the disk tray is formed from PPE (polyphenylene ether).

18. A recording and/or playback apparatus comprising:

a device body;

a disk tray which is moved into, or to outside, the device body;

a disk rotation driving mechanism provided on the disk tray to rotate a disk-shaped recording medium;

an optical pickup to write and/or read information signals to and/or from the disk-shaped recording medium;

a pickup moving mechanism to move the optical pickup between the inner and outer circumferences of the disk-shaped recording medium; and

a disk tray holding mechanism to hold the disk tray inside the device body, the disk tray holding mechanism including:

- a forcing member to force the disk tray to outside the device body;
- an engagement projection provided at the device body and which engages with the disk tray to keep the disk tray engaged inside the device body;
- an engagement piece provided on the disk tray and which is pivoted in a direction in which the engagement projection is inserted inside the device body;
- a pivoting piece which gets into touch with the engagement piece to limit the pivoting range of the engagement piece, to thereby engage the engagement piece onto the engagement projection or disengage the engagement piece from the engagement projection;
- a plunger which is engaged with the pivoting piece and inserted into a magnetic coil to pivot the pivoting piece; and

a pressing piece which is put into contact with the pivoting piece when pressed by the engagement projection and thus presses the pivoting piece in a direction in which the engagement piece is engaged onto the engagement projection,

when the disk tray is inserted into the device body against the force of the forcing member, the engagement piece pressing the pressing piece, the pivoting piece thus put into contact with the pressing piece being pivoted in a direction in which the engagement piece is engaged onto the engagement projection and the engagement piece being thus engaged on the engagement projection, whereby the disk tray is held inside the device body; and

when the plunger pivots the pivoting piece, the engagement piece being forced in a direction in which it is disengaged from the engagement projection, whereby the disk tray is ejected to outside the device body under the force of the forcing member.

19. The apparatus as set forth in claim 18, wherein there is formed in a portion of the pivoting piece that is in contact with the pressing piece a slit which allows the pivoting piece to elastically be displaceable.

20. The apparatus as set forth in claim 18, wherein the pressing piece or pivoting piece has a protrusion formed at at least one of the contact portions of the pressing piece or pivoting piece, that is in contact with the pivoting piece or pressing piece.

21. The apparatus as set forth in claim 18, wherein there is formed near the pressing piece a limiting projection that limits the pivoting area of the pressing piece to within a

range in which the engagement projection can be pressed.

22. The apparatus as set forth in claim 18, wherein:

the pressing piece is forced by the torsion coil spring pivotably within a predetermined pivotable range;

the torsion coil spring is wound on a pivoting shaft formed on the pressing piece, passed between a pair of engagement pieces provided near the pressing piece and hooked at the free end thereof on one of the engagement pieces; and

one of the engagement pieces in pair, on which the free end of the torsion coil spring is hooked, is formed generally circular.

23. A recording and/or playback apparatus comprising:

a chassis;

a moving member including a recording medium mount on which a recording medium is to be placed and which is supported by the chassis to be movable and thus movable between a recording medium change position where it is projected forward from the chassis and a recording medium home position inside the chassis; and

a flexible cable having first and second arm portion portions and which is flat and generally U-shaped, the first arm portion being fixed by connection to a connector with the free end thereof directed to the back of the chassis,

at least a part of the second arm portion of the flexible cable being flexibly bent when the moving member is moved; and

the part of the flexible cable, flexibly bent when the moving member is moved

between the recording medium change position and recording medium home position, being smaller in thickness than the other part of the flexible cable.

24. The apparatus as set forth in claim 23, wherein:

the length of the flexibly bent part is generally a half of a moving distance of the moving member; and

the thin part of the second arm portion is positioned near the connecting with the connector when the moving member has been moved to the recording medium home position.

25. The apparatus as set forth in claim 24, wherein:

the base and free ends of the flexibly bent part are formed thinner; and

the thin base end of the flexibly bent of the second arm portion is moved into the chassis while being flexibly bent as the moving member is moved toward the recording medium home position.

26. The apparatus as set forth in claim 23, wherein the first arm portion is formed thinner at the free end thereof than the rest thereof.